

vertical position shall be positively secured when in the upright position, unless the design of the system otherwise prevents unintentional movement.

(h) Hatches shall not be opened or closed while employees are in the square of the hatch below.

(i) All materials such as dunnage, lashings, twist locks, or stacking cones shall be removed from the hatch cover or be secured to prevent them from falling off the cover before the hatch cover is moved.

(j) When a hatch is to be covered, hatch covers or night tents shall be used. Any covering that only partially covers the hatch, such as alternate hatch covers or strips of dunnage, shall not be covered by a tarpaulin. Exception: A tarpaulin may be used to cover an open or partially open hatch to reduce dust emissions during bulk cargo loading operations, if positive means are taken to prevent employees from walking on the tarpaulin.

Subpart F—Vessel's Cargo Handling Gear

§ 1918.51 General requirements (See also § 1918.11 and appendix III of this part).

(a) The safe working load specified in the cargo gear certification papers or marked on the booms shall not be exceeded. Any limitations imposed by the certifying authority shall be followed.

(b) All components of cargo handling gear, including tent gantlines and associated rigging, shall be inspected by the employer or a designated person before each use and at appropriate intervals during use. Any gear that is found unsafe shall not be used until it is made safe.

(c) The employer shall determine the load ratings shown on the vessel's wire rope certificates for all wire rope and wire rope slings comprising part of ship's gear and shall observe these load ratings.

(d) The following limitations shall apply to the use of wire rope as a part of the ship's cargo handling gear:

(1) Eye splices in wire ropes shall have at least three tucks with a whole strand of the rope and two tucks with one-half of the wire cut from each

strand. Other forms of splices or connections that the employer demonstrates will provide the same level of safety may be used;

(2) Except for eye splices in the ends of wires, each wire rope used in hoisting or lowering, in guying derricks, or as a topping lift, preventer, segment of a multi-part preventer, or pendant, shall consist of one continuous piece without knot or splice; and

(3) Wire rope or wire rope slings exhibiting any of the defects or conditions specified in § 1918.62(b)(4) (i) through (vi) shall not be used.

(e) Natural and synthetic fiber rope slings exhibiting any of the defects or conditions specified in § 1918.62(e) (1) through (7) shall not be used.

(f) Synthetic web slings exhibiting any of the defects or conditions specified in § 1918.62(g)(2) (i) through (v) shall not be used.

(g) Chains, including slings, exhibiting any of the defects or conditions specified in § 1918.62 (h)(3) (iii), (iv), or (h)(6) shall not be used.

§ 1918.52 Specific requirements.

(a) *Preventers.* (1) When preventers are used they shall be of sufficient strength for the intended purpose. They shall be secured to the head of the boom independent of working guys unless, for cast fittings, the strength of the fitting exceeds the total strength of all lines secured to it. Any tails, fittings, or other means of making the preventers fast on the deck shall provide strength equal to that of the preventer itself.

(2) Wire rope clips or knots shall not be used to form eyes in, nor to join sections of, preventer guys.

(b) *Stoppers.* (1) Chain topping lift stoppers shall be in good condition, equipped with fiber tails, and long enough to allow not fewer than three half-hitches in the chain.

(2) Chain stoppers shall be shackled or otherwise secured so that their links are not bent by being passed around fittings. The point of attachment shall be of sufficient strength and so placed that the stoppers are in line with the normal topping lift lead at the time the stopper is applied.

(3) Patent stoppers of the clamp type shall be appropriate for the size of the

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rope used. Clamps shall be in good condition and free of any substance that would prevent their being drawn tight.

(c) *Falls.* (1) The end of the winch fall shall be secured to the drum by clamps, U-bolts, shackles, or other equally strong methods. Fiber rope fastenings shall not be used.

(2) Winch falls shall not be used with fewer than three turns on the winch drum.

(3) Eyes in the ends of wire rope cargo falls shall not be formed by knots and, in single part falls, shall not be formed by wire rope clips.

(4) When the design of the winch permits, the fall shall be wound on the drum so that the cargo hook rises when the winch control lever is pulled back and lowers when the lever is pushed forward.

(d) *Heel blocks.* (1) When an employee works in the bight formed by the heel block, a preventer at least three-quarters of an inch (1.9 cm) diameter wire rope shall be securely rigged, or equally effective means shall be taken, to hold the block and fall if the heel block attachments fail. Where physical limitations prohibit the fitting of a wire rope preventer of the required size, two turns of a one-half inch (1.3 cm) diameter wire rope shall be sufficient.

(2) If the heel block is not so rigged as to prevent its falling when not under strain, it shall be secured to prevent alternate raising and dropping of the block. This requirement shall not apply when the heel block is at least 10 feet (3.0 m) above the deck when at its lowest point.

(e) *Coaming rollers.* Portable coaming rollers shall be secured by wire preventers in addition to the regular coaming clamps.

(f) *Cargo hooks.* Cargo hooks shall be as close to the junction of the falls as the assembly permits, but never farther than two feet (.61 m) from it. Exception: This provision shall not apply when the construction of the vessel and the operation in progress are such that fall angles are greater than 120 degrees. Overhaul chains shall not be shortened by bolting or knotting.

§ 1918.53 Cargo winches.

(a) Moving parts of winches and other deck machinery shall be guarded.

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(b) Winches shall not be used if control levers operate with excessive friction or excessive play.

(c) Double gear winches or other winches equipped with a clutch shall not be used unless a positive means of locking the gear shift is provided.

(d) There shall be no load other than the fall and cargo hook assembly on the winch when changing gears on a two-gear winch.

(e) Any defect or malfunction of winches that could endanger employees shall be reported immediately to the officer in charge of the vessel, and the winch shall not be used until the defect or malfunction is corrected.

(f) Temporary seats and shelters for winch drivers that create a hazard to the winch operator or other employees shall not be used.

(g) Except for short handles on wheel type controls, winch drivers shall not be permitted to use winch control extension levers unless they are provided by either the ship or the employer. Such levers shall be of adequate strength and securely fastened with metal connections at the fulcrum and at the permanent control lever.

(h) Extension control levers that tend to fall due to their own weight shall be counterbalanced.

(i) Winch brakes shall be monitored during use. If winch brakes are unable to hold the load, the winch shall be removed from service.

(j) Winches shall not be used when one or more control points, either hoisting or lowering, are not operating properly. Only authorized personnel shall adjust control systems.

(k) When winches are left unattended, control levers shall be placed in the neutral position and the power shall be shut off or control levers shall be locked at the winch or the operating controls.

§ 1918.54 Rigging gear.

(a) *Guy and preventer placement.* Each guy or preventer shall be placed to prevent it from making contact with any other guy, preventer, or stay.

(b) *Guis.* When alternate positions for securing guys are provided, the guys shall be so placed as to produce a minimum stress and not permit the boom to jackknife.